Claims

We Claim:

1. An oil-based drilling fluid for use in sealing sand formations comprising:
   a) a polymer latex capable of providing a deformable latex film on at least a portion of a subterranean formation, the latex comprising polymer particles in an aqueous continuous phase;
   b) a hydrocarbon base fluid; and
   c) an emulsifier.

2. The oil-based drilling fluid of claim 1 where the polymer particles in the latex average between about 0.8 to less than 10 microns in size.

3. The oil-based drilling fluid of claim 1 where the latex particles are in a size distribution where the majority of the particles range from more than 10 to less than 100 microns.

4. The oil-based drilling fluid of claim 1 where the polymer latex is capable of providing a deformable latex seal on at least a portion of a subterranean sand formation and the polymer particles are selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof.

5. The oil-based drilling fluid of claim 1 where the polymer latex is present in the drilling fluid in an amount of from about 0.1 to about 10 volume% based on the total oil-based drilling fluid.

6. The oil-based drilling fluid of claim 5 where the polymer particles in the latex comprises particles that average about 1 microns to less than 100 microns in size.

7. An oil-based drilling fluid for use in sealing subterranean sand formations comprising:

a) from about 1 to about 10 volume% of a polymer latex having particles selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof in an aqueous continuous phase;

b) a hydrocarbon base fluid; and

f) an emulsifier in an amount effective to keep the latex suspended in the oil-based drilling fluid.

8. A method of inhibiting fluid loss of an oil-based drilling fluid in a sand formation, the method comprising:

a) providing an oil-based drilling fluid comprising:

i) a polymer latex capable of providing a deformable latex film on at least a portion of a subterranean formation, the latex comprising polymer particles in an aqueous continuous phase;

ii) a hydrocarbon base fluid; and

iii) an emulsifier; and

b) circulating the oil-based drilling fluid in contact with a borehole wall.

9. The method of claim 8 where in providing the oil-based drilling fluid the polymer particles are in a size distribution where the majority of the particles range from about 1 to less than 100 microns.

10. The method of claim 8 where in providing the oil-based drilling fluid the polymer particles in the latex are average from about 1 to 10 microns in size.

11. The method of claim 8 where in providing the oil-based drilling fluid, the polymer latex is capable of providing a deformable latex seal on at least a portion of a subterranean sand formation and the polymer particles are selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof.

12. The method of claim 8 where in providing the oil-based drilling fluid, the polymer latex is present in the drilling fluid in an amount of from about 0.1 to about 10 vol.% based on the total oil-based drilling fluid.

13. The method of claim 8 where in providing the oil-based drilling fluid, the polymer latex comprises polymer particles are in a size distribution where the majority of the particles range from about 1 to less than 100 microns.

14. A method of inhibiting fluid loss of an oil-based drilling fluid in a sand formation, the method comprising:

a) providing an oil-based drilling fluid comprising:
   i) from about 0.1 to about 10 vol.% of a polymer latex comprising polymer particles in an aqueous continuous phase where the polymer particles are selected from the group consisting of polymethyl methacrylate, polyethylene, carboxylated styrene/butadiene copolymer, polyvinylacetate copolymer, polyvinyl acetate/vinyl chloride/ethylene copolymer, polyvinyl acetate/ethylene copolymer, natural latex, polyisoprene, polydimethylsiloxane, and mixtures thereof;
   ii) a hydrocarbon base fluid; and
   iii) an emulsifier; and
   where the proportion is based on the total oil-based drilling fluid; and
b) circulating the oil-based drilling fluid in contact with a borehole wall.